To: Argyropoulos, Paul[redacted]
From: Larry Schafer
Sent: Thur 11/14/2013 3:38:39 PM
Subject: Question

What prep do you need from us for Chris on Tuesday?

Larry Schafer
National Biodiesel Board
O: 202.737.8801
M: [redacted]

Biodiesel – America's Advanced Biofuel!
www.americasadvancedbiofuel.com

1331 Pennsylvania Ave. NW
Suite 505
Washington DC 20004

To: Bittleman, Sarah [redacted] Argyropoulos, Paul [redacted] Campbell, Todd - OSEC [redacted]
From: Brent Erickson
Sent: Fri 11/8/2013 8:17:10 PM
Subject: Braley "Angered and Frustrated" with Obama on Renewable Fuels Standard
RVO Letter to Obama.11052013.pdf
ATT00001.htm

Brent Erickson

Executive Vice President

Industrial and Environmental Section

Biotechnology Industry Organization (BIO)

1201 Maryland Ave. S.W., S. 900

FYI

BRUCE L. BRALEY
1st District, Iowa

Congress of the United States
House of Representatives
Washington, DC 20515

[redacted]
FAX (202) 225-6666
http://braley.house.gov

November 8, 2013

President Barack Obama
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

Dear President Obama,

I'm angered and frustrated that under your leadership Administrator Gina McCarthy and her staff at the Environmental Protection Agency are promoting policy options that would reduce the renewable volume obligations (RVOs) under the Renewable Fuel Standard (RFS). I urge you to come to Iowa and visit with workers in the renewable fuels industry, where we are strengthening the economy and creating jobs thanks to the current RFS.

The recently leaked EPA draft regarding RVOs is an unprecedented pivot from current energy policy that will severely damage economies all across the Midwest and endanger consumer choice at the pump for years to come. Just this past July you touted this policy, stating that "biofuels are already reducing our dependence on oil, cutting pollution, and creating jobs around the country."

More than 63,000 of the jobs you mentioned in your July statement are in my home state of Iowa, a national leader in the innovation and production necessary to replace foreign oil. The EPAs proposal on RVOs is an affront to the pioneering leaders across America that produce biofuels – from places like Southern California, Texas, Iowa, Tennessee, and Illinois – and support 400,000 good paying jobs that American citizens are proud of.

Given your history of support for this policy and your current climate change agenda, I'm stunned that the White House is caving to big oil instead of holding them accountable to the statutory requirements they have been aware of since 2005 and 2007. Since casting your votes in support of the Energy Policy Act in 2005 and the Energy Independence and Security Act of 2007 you have led a White House that has promised cleaner resources for the future.

The RFS has the potential to give real meaning to your climate change agenda and leaders in Iowa and across the nation have made investments that could turn the hope of homegrown, renewable energy resources into reality and free us from the costs and risks tied to big oil and foreign markets. Unfortunately, the leaked RVO numbers will injure the biofuel infrastructure indefinitely. I ask that you and your staff reconsider the

EPAs proposal and provide RVO guidance that stands up to big oil and supports investments in clean energy and domestic jobs.

Sincerely,

Bruce Braley

Bruce Braley
Member of Congress

cc: Administrator Gina McCarthy, EPA

To: Bittleman, Sarah [redacted] Campbell, Todd - OSEC [redacted] Argyropoulos, Paul [redacted]
From: Brent Erickson
Sent: Fri 11/8/2013 4:11:11 PM
Subject: Lord of the RINs? Vitol's ethanol credit bonanza

Brent Erickson

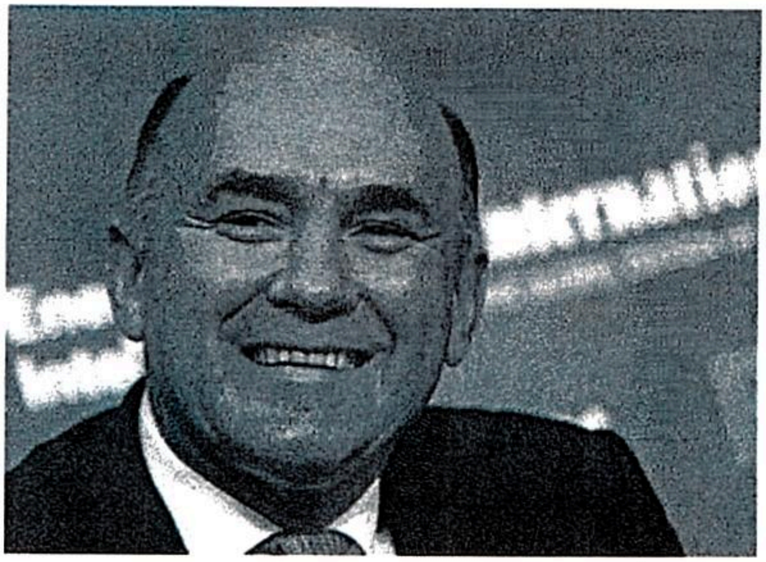
Executive Vice President

http://www.reuters.com/article/2013/11/07/us-ethanol-credits-vitol-insight-idUSBRE9A606R20131107

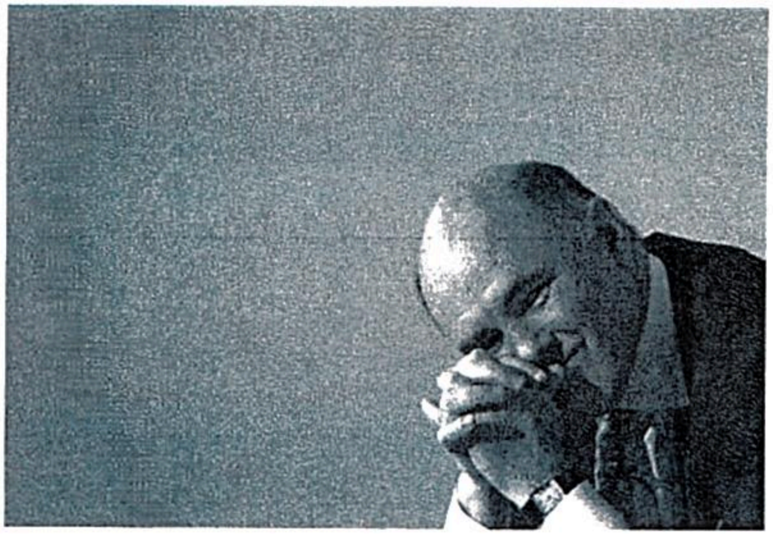
Insight: Lord of the RINs? Vitol's ethanol credit bonanza

By Cezary Podkul

NEW YORK




Vitol Group



President and Chief Executive of Vitol Group Ian Taylor participates in a question and answer session during the Oil & Money conference in London in this October 1 2013 file photo

RINs timeline

NEW YORK (Reuters) - Swiss trading company Vitol SA is among the biggest beneficiaries of an opaque U.S.-government-mandated trading scheme established to help boost the share of ethanol in the nation's fuel supply, market sources say.

As refiners scrambled this year to meet an expected steep rise in the amount of ethanol that must be blended into gasoline, trading in little-known credits used to enforce the quotas turned white-knuckled. RINs, or renewable identification numbers, have traded for years in a niche market for pennies apiece. In mid-July they soared to nearly $1.45 from about 5 cents last December, providing huge opportunities for oil traders and others in the market.

Oil refiners such as PBF Energy Inc railed against the rally, blaming it on a flawed renewable fuels program and rampant speculation. They said meeting next year's ethanol blending quota was impossible because they couldn't sell fuel with more than 10 percent ethanol without risking damage to car engines or breaching warranties. This caused the surge in demand for RINs. Refiners vowed to pass on nearly $2 billion in costs to consumers through higher gasoline prices.

The winners have been less vocal, but brokers and traders active in the loosely regulated market say that privately held Vitol, the world's largest trader of oil, appears to have done especially well. That view is based on outside observations of how the company traded in the over-the-counter market, as well as its decade-long effort to build an unrivalled network of U.S. ethanol blending terminals and overseas suppliers that gave it a prime place in the RINs market.

Seven sources, including those at three major brokerages who do direct business with Vitol, said it was a big buyer of RINs early in the year before prices spiked. Several also said its Houston-based trading team was a prominent seller as prices climbed.

"They're the success story of it all," said one source who trades with Vitol. Other market participants confirmed that the company was among the largest traders they saw in the RINs market, despite its owning no U.S. refineries or fuel stations. They said they didn't know if it had made money.

Vitol Chief Executive Ian Taylor, speaking at the Reuters Commodities Summit this week, said RINs were a "notoriously difficult animal.

"I wouldn't say we got it particularly brilliantly right or anything like that. You make an assessment of how many RINs are available in the market ... and what the demand is going to be. What you get right in 2013 you might have got wrong in 2012 or for 2014."

Spokeswoman Andrea Schlaepfer said Vitol "buys and sells RINs on a regular basis" because it has its own biofuel blending obligations to manage. She declined to comment on specific trades or whether the company made a profit through its activities. She said it had no traders dedicated solely to RINs and did not consider itself one of the biggest participants in the market.

For many observers, Vitol and other traders simply responded early to a glitch in the regulations that threatened to cause a shortage of credits next year. Such opportunism was perfectly permissible. Vitol and others may have profited from the glitch, but they did not cause it, experts say.

"They're entrepreneurial, they're skillful and they look at the regulations and figure out how to make money," said Philip Verleger, an energy economist based in Colorado who testified about the RINs market at a Commodity Futures Trading Commission meeting this summer.

Still, Vitol's apparent trading success will only add to the fierce debate over the future of a controversial 2007 law aimed at increasing the amount of ethanol in U.S. gasoline. It may also stoke political scrutiny of the RINs market, which has been this year's wildest in the commodities world. Several lawmakers have called on the CFTC to more closely examine the market.

BOXTOP CREDITS

RIN credits are simply a means of enforcing government blending mandates.

Every gallon of ethanol manufactured in or imported into the U.S. receives a 38-digit RIN that tracks its progress throughout the fuel chain. Once a refiner buys the gallon and blends it with gasoline, the RIN can be separated from the gallon and presented to the Environmental Protection Agency as proof of compliance with the mandate - akin to clipping a coupon from a cereal box to show proof of purchase.

The RINs also allow companies such as wholesalers who predominantly blend fuel but don't import or refine any gasoline to sell excess RINs to companies that need them in order to meet EPA obligations.

In some respects, Vitol's prominence is the result of years of quietly positioning itself as a key player in the U.S. renewable fuels markets. It was the country's biggest importer of ethanol last year as its shipments more than tripled, and has long employed a unique arrangement importing Brazilian ethanol via an El Salvador processing plant, according to U.S. government data, an activity that can help it generate RINs.

In 2010 Vitol built a $130 million oil terminal on Florida's east coast and added a biofuel facility last year, giving it a major foothold in the import-dependent state. It maintains ethanol storage, supply and distribution facilities in all key U.S. energy hubs, including New York Harbor, Chicago, Florida, Houston, San Francisco and Los Angeles.

By 2010, when the EPA finalized its rules for RINs trading, Vitol said in a brochure that it was "ideally placed" to ride the expanding ethanol market; Vitol was developing a blending program and looking for more opportunities in the business, it said. At the time, the value of an ethanol RIN was negligible; the credits traded at less than 5 cents for most of 2010 and 2011.

Whether Vitol's ethanol blending and import activity offset the regulatory obligations resulting from its gasoline imports is unknown. (Gasoline importers, just like refiners, are required to provide RINs to show their compliance.) Vitol has a "significant and fluctuating" RIN obligation whose management is the "primary driver" of its RIN trading, Schlaepfer said.

Nor is it clear to what extent Vitol engaged in speculative trading. Market sources said its activities appeared consistent with bets on rising prices in the early days of the rally, but only Vitol knows for sure. As prices surged this year, such trading likely "exacerbated" the rally, said Divya Reddy, energy analyst at policy consulting firm Eurasia Group in Washington

DC.

Vitol said in a recent business brochure that trading in other commodities - a group that includes renewable fuels and RINs as well as metals, chemicals, carbon and coal - made up less than 9 percent of its $303 billion in revenues last year. It does not disclose profits.

Other companies that have made money from RINs include oil giant BP Plc, which said in July that it was "able to trade into this spike recently and have done quite well out of it." To a lesser extent, some banks and hedge funds have also participated. Even a Missouri academic saw the potential for a spike.

The market for RINs is tiny compared to oil, but the dramatic volatility offered scope for outsized returns. In June and July, at the peak of the rally, at least 2 billion 2013 separated ethanol RINs were transacted, nearly two-thirds of the total secondary market volume for the first seven months of the year, according to a Reuters analysis of EPA transaction data. That's about $1 billion a month for the period, based on average prices.

TROUBLE AHEAD

For many observers, the troubles stirring in the RIN market were increasingly apparent toward the end of 2012.

The 2007 law that established the current RIN market called for boosting ethanol to 15 billion gallons by 2015, an increase that assumed steadily rising demand for gasoline that would keep the ratio of ethanol to petroleum-based gasoline below 10 percent.

Instead, gasoline demand has fallen sharply. Without measures to relax the rules, the quotas for 2014 threatened to push gasoline supplies beyond the so-called blend wall - the 10 percent ethanol mix that refiners say is the maximum they can sell.

Last December, Wyatt Thompson, an agricultural economist at the University of Missouri, published a paper titled "A Question Worth Billions: Why Isn't the Conventional RIN Price Higher?" In it, he predicted the price of RINs could soon increase more than tenfold from levels near 5 cents a credit.

His predictions proved conservative. Between the end of December and early March, RIN prices soared to nearly $1.05 each from about 5 cents.

Panicked refiners jumped in to buy the credits before prices moved even higher. As they did so, traders said they also saw Vitol - which they said had been an avid buyer earlier in the year - selling some credits. Three sources mentioned 60 cents as one price.

Schlaepfer declined to comment on specific trades presented by Reuters.

Whether Vitol fared as well while the RIN bubble deflated is not clear. Prices tumbled after the EPA hinted in August that it would use "flexibilities" in the 2007 law to reduce blending quotas. An agency proposal leaked last month showed it suggested a deep reduction in the ethanol mandate for 2014, causing a further decline in prices to as low as 23 cents each - a price not seen since late January. On Wednesday, RINs traded at about 30 cents each.

Schlaepfer said whether RINs rise or fall is of "limited importance" to Vitol. "We are no better (or worse) off than any other obligated party in the industry."

Regardless of how Vitol made out, CEO Taylor said he saw little future in the RINs market, whose fate now resides in Washington: "Any business that is government-determined is not particularly sustainable, in my view."

(Reporting by Cezary Podkul in New York, Dmitri Zhdannikov in London; editing by Joshua Schneyer, Jonathan Leff, Martin Howell and Prudence Crowther

Brent Erickson

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Follow me on *Twitter (@BErickson_BIO)*

To: Argyropoulos, Paul [redacted]
From: Larry Schafer
Sent: Fri 11/8/2013 3:23:12 PM
Subject: RE quick question

Thanks

Larry Schafer

National Biodiesel Board

O: [redacted]

M: [redacted]

[redacted]

Biodiesel – America's Advanced Biofuel!

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From: Argyropoulos, Paul [mailto:[redacted]
Sent: Friday, November 08, 2013 8:21 AM
To: Larry Schafer
Subject: RE: quick question

Can't say definitively but expect something like a 60 day time period post publication........

Paul Argyropoulos

Senior Policy Advisor

US EPA

Office of Transportation and Air Quality

Phone: [redacted]

Mobile: [redacted]

Email: argyropoulos.[redacted]

Web: www.epa.gov

From: Larry Schafer [mailto:[redacted]
Sent: Thursday, November 07, 2013 1:02 PM
To: Argyropoulos, Paul
Subject: quick question

How long would you expect the comment period will be .... 30, 45, 60 or 90?

Larry Schafer

National Biodiesel Board

O: [redacted]

M: [redacted]

[redacted]

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To:	Argyropoulos, Paul [redacted]
From:	Larry Schafer
Sent:	Thur 11/7/2013 6:01:54 PM
Subject:	quick question

How long would you expect the comment period will be .... 30, 45, 60 or 90?

Larry Schafer
National Biodiesel Board
O: [redacted]
M: [redacted]
LSchaf[redacted]

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To: Argyropoulos, Paul [redacted]
From: Brent Erickson
Sent: Thur 10/31/2013 4:11:51 PM
Subject: Meeting in December

Dear Paul,

This is an important time in our industry. Currently we see growth in renewable chemicals that has been driven by the volatile price of oil and consumer demand for more environmentally friendly products. Producers of renewable chemicals are looking for partnerships across the Pacific to further the growth of the industry. Investment in innovative formation of biobased platforms for renewable chemicals can provide real opportunities to create green jobs, reduce dependence on foreign oil and increase energy security for the United States.

Biofuels too continue to progress despite some policy challenges in Washington. Cellulosic fuels are being commercialized rapidly and we are seeing significant progress in commercializing drop-in fuels. That is why we are excited about the **BIO Pacific Rim Summit on Industrial Biotechnology & Bioenergy taking place in San Diego December 8-11, 2013.**

Biofuels and renewable chemicals are just two of the key topics that will be discussed at this unique conference. We are tracking a record number of attendees and expect over 380 participants. Please see a list of companies and organizations that have currently registered to attend. More information on the event can be found at **bio.org/pacrim.** I hope you take a moment to register soon, now that the conference is only about five weeks away. I look forward to seeing you and others from your organization in beautiful San Diego this December.

Abengoa Bioenergy US Holding, Inc.
Ag-West Bio Inc.
AJ Industries
Alaska Airlines
Al-Balqa' Applied University
Algae Biomass Organization
AltAir Fuels
American Process, Inc.
Amity Institute of Biotechnology, Amity University
Amyris, Inc.
Arizona State University, AzCATI
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ATB Potsdam
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Pacific Biodiesel
Pareto Biotechnologies
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POET-DSM Advanced Biofuels LLC
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Praj Matrix-The Innovation Center (a division of Praj Industries Ltd.)
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Verenium
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Yulex
Yunnan Normal University (Qactive)
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Western Research Institute
View on bio.org/pacrim

Best Personal Regards,

Brent Erickson
Executive Vice President
Industrial and Environmental Section
Biotechnology Industry Organization
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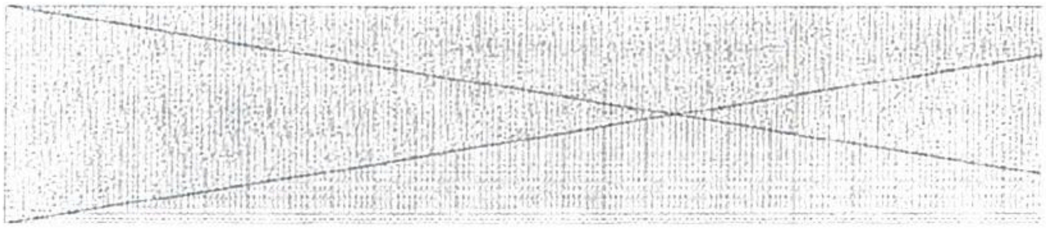

To: Campbell, Todd - OSEC (b) (6) [redacted] Bittleman, Sarah (b) (6) [redacted] Argyropoulos, Paul (b) (6) [redacted]
From: Brent Erickson
Sent: Wed 10/30/2013 8 03 44 PM
Subject: FW Hart Energy report RINs
EBN Week 8-21.pdf

FYI if you have not seen.

We used the attached EBN report in the meeting with OMB last week.

B.E.

ETHANOL & BIOFUELS NEWS
Your Critical Weekly Biofuels Market and Policy Update
HARTENERGY

AUGUST 21, 2013 VOLUME XXV ISSUE 33

FEATURE

Volatile RIN Credit Market Pits Winners, Losers in Obligated Party Quarterly Earnings

Participants involved in the downstream oil refining, fuel marketing and blending markets reported their respective second-quarter (2Q) financial results recently. While earnings varied from one obligated party to another, all of them candidly disclosed the real impacts the Renewable Fuel Standard (RFS) and Renewable Identification Numbers (RINs) had on their bottom line and on U.S. fuel prices.

The following is a recap of revealing second-quarter (2Q) 2013 earnings statements from several industry participants that are faced with RIN obligations in the U.S., which is widely perceived as highly volatile and opaque in nature:

ExxonMobil

The nation's largest refiner stated during its 2Q 2013 earnings call August 1 that RINs have had little or no effect on the company's financials.

"We are a net purchaser of RINs, but I will tell you we are pretty well-balanced. We do generate the majority of our [RIN] credits by blending our biofuels directly…it's not real significant," said David Rosenthal, vice president of investor relations and secretary, on the company's earnings call.

When asked by an analyst if RINs had any material impact on the firm's quarterly financial performance, Rosenthal replied, "No, not at all."

Phillips 66

In its 2Q earnings call on July 31, Phillips 66's reported that its refining segment "continued to incur increased costs

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LEGISLATION & POLITICS
AFPM, API Petition U.S. EPA to Partially Waive 2014 Renewable-Fuel Mandate

TECHNOLOGY UPDATES
CSU Researchers Develop Process for Converting Bio-Furaldehydes into Oxygenated Diesel, Linear Alkane Fuels
German Researchers Simplify Bio-Based Hydrogen Synthesis
Lehigh University Research Delves into Photocatalytic Route for Renewable Methanol Conversion Scheme

INDUSTRY & FACILITY NEWS
Valero Pulls Out of Mascoma's Planned U.S. Commercial Cellulosic-Ethanol Project
Marathon Petroleum Acquires Interest in Three Ethanol Plants
USDA Lowers Projected 2013-2014 U.S. Corn Crop Yield at 13.8 Billion Bushels
CARB to Propose 'Low Carbon Fuel Standard' Amendments in 2014
Cool Planet Adds Former ConocoPhillips Executive to Board of Directors
USDA Solicits Bids Under Feedstock Flexibility Program
INVISTA, SilicoLife Forge Bio-Based Chemical Collaboration Agreement
USDA Doles Out REAP Funding for Renewable-Energy Projects
EdeniQ, Pacific Ag Partner to Integrate Cellulosic-Ethanol into Installed Corn-Ethanol Production Base
Midwest AgEnergy Group Breaks Ground on Corn-Ethanol Biorefinery in N.D.
IRFA: Iowa Biodiesel Production Sets Record in Second-Quarter 2013
Intrexon Closes US$184 Million IPO

INTERNATIONAL DEVELOPMENTS
Ethanol Sales by Brazilian Mills in South-Central Region Up Over 31%
São Martinho's EBITDA Grows 95.8% to US$91.1 Million in 2013-2014 Fiscal Year Earnings
GranBio, Rhodia Ink Bio-Based Chemical Partnership Deal
Aurora Algae Completes Construction on Algae Production Test Site in Australia
BDI-BioEnergy Contracted to Retrofit Spanish Biodiesel Plant

PRICES & MARKETS

to purchase [RINs] under the [U.S.] Environmental Protection Agency's [EPA] [RFS] program. To the extent these costs are not captured in the selling price of motor fuels, realized refining margins are reduced," according to the company.

Phillips 66 Chief Financial Officer (CFO) Greg Maxwell disclosed during the company's earnings call that RINs didn't necessarily affect strong refining margins or refinery runs.

"...with the market cracks where they are, they're still encouraging high run rates," Maxwell said.

Maxwell further noted that while RINs may represent a cost for Phillips 66's refining business, they are a profit for the company's blending and marketing segment.

"All of the RINs that are generated through our blending activities show up as a benefit in marketing and specialties, and then the cost of those RINs, or the value if you will, are transferred over to refining," Maxwell said.

Executive Vice President Tim Taylor noted on the call that the company "may increase [biofuel] blending to reduce its RIN exposure."

Hess Corp.

Hess Corp. executives reported July 31 that the company's retail and terminal networks generate a sufficient amount of RINs to meet its supply needs, adding that it recorded an after-tax benefit of US$17 from RIN sales in its second-quarter.

"We're generating around $20 million per month of excess RINs," CFO John Rielly told analysts and investors on the company's earnings call.

"[For the third-quarter], if you were to take the current pricing in place right now and say you sold all the RINs at that price, you could expect us to record an after-tax benefit of $35-$40 million," Rielly said.

Rielly further noted that, "...the cost of RINs rising in recent months has led to some RIN sharing at wholesale levels, which is reducing our retail fuel margins and offsetting some of the direct benefit from selling the excess RINs," meaning Hess is passing along some of the value of the RIN to customers.

Murphy Oil

Murphy Oil reported in its second-quarter earnings on July 31 an increase in its refining/marketing income in the quarter was "primarily due to better results for ethanol production operations and higher sales prices for ethanol RINs in the current period," according to the company's earnings statement.

"Profit from ethanol RIN sales was higher in 2013 due to significantly stronger sales prices for these credits," the company noted in the statement.

Marathon Petroleum Co.

In Marathon Petroleum's 2Q 2013 earning call on August 1, company executives said the company spent $20 million a month during the quarter on RIN credits.

Senior Vice President of Finance and Commercial Services Garry Peiffer admitted that gasoline imports haven't been affected by higher RIN prices, as has been threatened previously by some oil trade groups.

Peiffer said, "Gasoline imports were similar to past year, so that means that importers – who have to acquire a RIN – were still making money bringing barrels to the U.S."

Marathon also acknowledged the "zero-sum" nature of the RIN market, stating that RIN costs are not likely to be passed on to consumers.

"There are marketers out there who are net sellers of RINs and then we have obligated parties who are buyers of RINs convening at the wholesale level, so it's going to be very confusing for buyers of E10 and other biofuel [blends] to say is there a [pass-through RIN cost] added on or is it not added on," Peiffer noted.

Western Refining

Western Refining reported August 1 that increasing its wholesale and retail operations allowed the company to obtain the RINs it needs to comply with the RFS.

"The market for RINs has become very volatile. As we have mentioned previously, our growing wholesale and retail businesses generate RINs, which satisfy a significant portion of our renewable fuel obligations," CEO Jeff Stevens said in a statement.

Global Partners LP

Executives at Waltham, Mass.-based midstream logistics and marketing company Global Partners LP reported August 8 that it is maintaining a "hedge book" and "minimizing its RIN exposure to that," treating RINs as a "pass-through" to its business, according to President and CEO Eric Slifca.

When asked by an analyst if the company saw indirect benefits from heightened blending [biofuel] activities in its second-quarter, Slifca replied, "No, we're running our book the same as we always have. Certainly, we buy ethanol and we blend it into products and we sell it at the rack, but we also have other business partners in facilities that take those RINs as well as part of transactions," he said.

"We're not trying to get any unfound gains out of it, but there's risk if you do that and we're trying to squeeze any of that risk that's out of the book," Slifca noted.

Global Partners is an obligated party since it imports gasoline and, as a result, some of the blending activity that occurs at its rack offsets its RIN obligation, Chief

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Operating Officer Mark Romaine clarified on the company's earnings call.

HollyFrontier

HollyFrontier CEO Michael Jennings said on the company's August 7 second-quarter 2013 earnings call with analysts and investors that, having a merchant refiner business model, the firm needs to purchase about half of its RIN compliance requirement in the open market due largely to off-take agreements it entered at the time when it acquired its Tulsa, Okla., and El Dorado, Kan. refineries.

"...in the wholesale markets we serve, we're seeing price adjustments to indicate that the cost of the RIN is being largely paid by the consumer at the pump. This results from clear (non-blended) gasoline now pricing at a premium to E10 blends at many of the wholesale racks in our markets," Jennings said on the call.

"The amount of this difference, not surprisingly, is approximately the value of the RIN that can be generated by buying clear gasoline and blending ethanol. Other market distortions driven by the RFS include a price premium for ULSD [ultra-low sulfur] diesel, which requires a RIN, versus jet fuel, which does not.

When asked by an analyst how the company might approach its RIN strategy going forward, Jennings said: "A core part of our strategy is to try to blend more ethanol. Insofar as the RIN makes a difference, we make jet fuel as opposed to ULSD at the margin. We're obviously doing those things in terms of rack pricing to try to offset those impacts of the RIN.

"Looking forward through the next six months, I think they [the U.S. Environmental Protection Agency] has made explicit recognition that there's a problem and the blend wall is so extreme next year that we believe they will act and mitigate that making E10 the likely resting point at least for the foreseeable future," Jennings said, alluding to the agency's 2013 renewable-fuel volume final rulemaking released August 6.

While it didn't disclose how much RIN prices ate into its quarterly profits, Jennings noted that, at 80¢-per-gallon (gal), HollyFrontier could spend anywhere from $125-$150 million annually on RIN compliance costs.

Buckeye Partners

Houston, Texas-based midstream energy logistics firm Buckeye Partners disclosed August 2 that its fuel marketing subsidiary, Buckeye Energy Services (BES), benefited $3.5 million from RINs sale in the second-quarter, thanks to biofuel and ethanol blending.

BES currently operates in the Mid-Atlantic, Northeast and Midwest markets. With over 70 years of market expertise, BES is one of the largest wholesale distributors of refined petroleum products with total terminal capacity of over 3.5 million barrels.

Alon USA

Dallas-based Alon USA Partners LP reported August 5 that sharp increases in RIN prices amounted to about $8 million of expense in its second-quarter.

"We are actively working to mitigate these costs by increasing branded and unbranded sales throughout our system, and also by blending biodiesel into our Big Spring product beginning in September. Based on current RINs pricing, we estimate our total RINs obligations for the year will be approximately $20 million," said President and CEO Paul Eisman in a statement.

PBF Energy

Tom O'Malley, executive chairman of New Jersey-based independent refiner PBF Energy, disclosed August 1 that the company expects to spend over $200 million on RINs this year based on current market conditions.

"This is one of the company's largest single cost categories other than crude oil purchases. It exceeds the salaries and wages we pay to operate all three of our refineries," O'Malley said.

"These costs will ultimately be borne by the consumer. We believe this is an expensive, non-productive tax on the American people and that the [RFS] administered by the EPA should be adjusted so that the public does not have to absorb the costs of the program," O'Malley said.

LyondellBassell

Petrochemical company LyondellBassell, which operates a 280,000 barrel-per-day refinery in Houston, reported July 26 that its RIN credit obligations could reach $200 million this year, up from $30 million last year, an increase that could pressure its refinery margins, according to company executives.

LyondellBasell CEO Jim Gallogly said on the company's earnings call that rising RIN prices almost doubled its expense on the credits to $50 million in the second-quarter.

Gallogly noted that the firm's RIN compliance costs amounted to about $25 million in the first-quarter this year when RIN prices averaged 78 ¢/gal, and $47 million in the second-quarter when they averaged 91¢/gal.

"Refining has been a challenging industry and continues to evolve. We believe that these market conditions coupled with an imbalance within renewable fuel requirements will continue to pressure our near-term results. Our path and strategy remain unchanged, and LyondellBasell is well-positioned to continue generating strong results and rewarding our shareholders," Gallogly said.

Northern Tier Energy

Chief Operating Officer Chet Kuchta told analysts and investors August 12 that the company generates enough RINs to cover about 75% of its 2013 renewable-fuel obligation.

As noted in previous earnings calls, Northern Tier Energy estimates it will need to purchase about 25-35 million RINs on the open market to cover its remaining biofuel obligation.

"We currently believe we'll be at the low-end of that range and our total RINs cost for the year will be approximately $20 million. We hope to further increase the percentage of [ethanol] blending that we do in 2014. We plan to accomplish this through various initiatives such as our retail expansion and increased sales of biodiesel," Chet Kuchta said.

"We were encouraged by the EPA's recent announcement and its softening stance regarding the 2014 blend wall issue and the possible decrease of the 2014 [renewable-fuel] mandate," he added.

Expounding on how Northern Tier Energy might approach increased biodiesel blending to address E10 blend wall concerns this year heading into 2014, CEO Hank Kuchta said, "Our marketing staff has been pretty diligent in trying to find more outlets [for biodiesel]. It isn't a big market, but it is growing."

Commenting on the company's overall RIN strategy, Hank Kuchta added, "We've done a good job to date. We're looking to go above that 75% number of self-generated RINs if you will. We see this as a minimal impact for us going forward. We'd certainly like to have the $20 million back, but we think we've done better than most."

Delek U.S. Holdings

Brentwood, Tenn.-based petroleum refining, logistics and retail firm Delek U.S. Holdings reported August 7 in its second-quarter earnings it benefitted from higher priced RINs.

"...our logistics segment performed well and continued to benefit from increases in the price of RINs," said Uzi Yemin, chairman, president and CEO of Delek in a statement.

"Our balance sheet remains strong giving us the ability to continue investing in our business while returning value to our shareholders," Yemin noted.

Calumet Specialty Products Partners LP

Indianapolis-based independent specialty hydrocarbon and fuel products producer Calumet Specialty Products Partners LP disclosed August 7 that its total RINs expense in its second-quarter 2013 was $15 million, versus $200,000 in the same quarter a year ago, "due primarily to a significant escalation in RINs prices," according to the company in its quarterly statement.

"For the remainder of 2013, the [company] anticipates that its purchased RIN expense required to comply with the [RFS] will range from $20 to $25 million per quarter, based on market prices as of June 30, 2013.

"For the full year 2013, the [company] anticipates that its purchased RIN expense required to comply with the RFS will be in the range of $65 to $75 million. These estimates are subject to fluctuations in the market price of RINs, in addition to our anticipated fuels production volumes during the second half of 2013," according to Calumet.

– Bryan Sims

LEGISLATION & POLITICS

AFPM, API Petition U.S. EPA to Partially Waive 2014 Renewable-Fuel Mandate

The American Fuel & Petrochemical Manufacturers (AFPM) and the American Petroleum Institute (API) on August 13 filed a joint-petition to the U.S. Environmental Protection Agency (EPA) for a partial waiver of the 2014 applicable volumes of the Renewable Fuel Standard (RFS).

"AFPM is calling on [the] EPA to exercise its authority to waive the 3.35 billion gallons from the 18.15 billion-gallon 2014 renewable-fuel mandate. This action is necessary to avoid the severe economic harm that will result from exceeding the 10% ethanol blend wall.

"Beyond 10%, the corrosive nature of ethanol renders the blended fuel incompatible with today's engines, vehicles and the multi-billion dollar infrastructure in place throughout the nation. Waiving the 2014 volumes is the only available solution to avert the potentially disastrous implications of the blend wall," according to a statement issued by AFPM.

"[The] EPA missed a golden opportunity to address the ethanol blend wall in 2013; however, we're encouraged the agency recognized there is a problem in its rule setting this year's biofuel requirement. This petition will provide a roadmap for the agency to follow as it promulgates its 2014 waiver," commented AFPM President Charles Drevna in the statement.

Responding to AFPM and API's jointly-filed petition to reduce the total 2014 ethanol volume requirement to 9.7%, pro-ethanol trade group Growth Energy CEO Tom Buis said, "The actions by API and AFPM are designed with one goal in mind: to eliminate any competition from clean, green biofuels in the liquid transportation fuels marketplace.

"It is time that oil companies and special interests stop worrying about maintaining their monopolistic practices and allow competition and choice in the marketplace. Not only should we provide consumers a choice and savings at the pump, we must stop putting our eggs in one basket when it comes to a national energy policy.

"Biofuels are a clean burning, reliable and sustainable alternative and it is time we start recognizing their cost savings and numerous benefits and end our addiction to fossil fuels and Big Oil's price gouging," Buis said.

TECHNOLOGY UPDATES

CSU Researchers Develop Process for Converting Bio-Furaldehydes into Oxygenated Diesel, Linear Alkane Fuels

Researchers at Colorado State University (Fort Collins, Colo.) reported in a paper published in the journal *ChemSusChem* on August 12 a duel process for upgrading biomass furaldehydes into oxygenated diesel and high-quality C_{10-12} (carbon-chain length) linear alkane fuels.

According to an abstract of the paper provided by the CSU researchers, the first of two steps "involves solvent-free self-condensation (Umpolung) through organocatalysis using an N-heterocyclic carbene (NHC), yielding C_{10-12} furoin intermediates.

"In the metal–acid tandem catalysis step, in water, the furoin intermediates are converted into oxygenated biodiesel by hydrogenation, etherification or esterification; or into premium alkane jet fuels by hydrodeoxygenation," according to the researchers.

German Researchers Simplify Bio-Based Hydrogen Synthesis

The Ruhr-Universität Bochum (RUB) in Germany announced August 12 that researchers have discovered an efficient process for hydrogen biocatalysis by developing semi-synthetic hydrogenases – hydrogen-generating enzymes – and adding the protein's biological precursor to a chemically synthesized inactive iron complex.

From these two components, the biological catalyst formed spontaneously in a test tube.

"Extracting hydrogenases from living cells is highly difficult," said Thomas Happe, head of the work group photobiotechnology at the RUB, in a statement.

"Therefore, their industrial application has always been a long way off. Now, we have made a decisive step towards the generation of bio-based materials," Happe said.

Together with colleagues from the MPI Mülheim and from Grenoble, the RUB researchers reported their findings in the journal *Nature Chemical Biology*.

"Under ideal conditions, one single hydrogenase enzyme can generate 9,000 hydrogen molecules per second. Nature has created a catalyst that is incredibly active even without any rare noble metals," Happe added.

The researchers from Bochum examined so-called iron-iron (FeFe) hydrogenases whose catalysis is based on an active center with a complex structure that contains iron, carbon monoxide and cyanide – only few living organisms are able to synthesize it.

In order to skip the tedious and inefficient process of hydrogenase production, chemists have recreated the enzyme component that is catalytically active. Even though the reproduction was successful, these so-called mimics – chemical imitations – only generate small volumes of hydrogen, according to the statement.

Due to the difficulty of extracting active hydrogenases from living organisms, Happe's team suggested an optimization of the method that had been reported by the research team from Bochum and their collaboration partners in *Nature* in June 2013.

The RUB biologists mixed the inactive hydrogenase precursor and the inactive chemical mimic, which was synthesized by their colleagues from Grenoble, within a test tube.

A few minutes later, a strong generation of hydrogen was observed. The hydrogenase precursor had spontaneously integrated the chemically synthesized iron substance into its protein scaffold. Biophysical analyses at the MPI in Mülheim showed that the enzyme thus generated is indistinguishable from natural hydrogenase.

"Until now, it has been assumed that enzymes with a complex structure such as hydrogenases require helper proteins to integrate the metal catalyst unit. When I proposed the idea for this experiment for the first time, nobody believed that it could work," Happe said.

Happe's research is funded by the Volkswagen Foundation under the title "LigH2t."

Lehigh University Research Delves into Photocatalytic Route for Renewable Methanol Conversion Scheme

Backed by a US$2 million grant from the National Science Foundation (NSF), Lehigh University (Bethlehem, Pa.) announced August 6 that a team of researchers are working to create renewable methanol from carbon dioxide (CO_2), sunlight and water.

The grant from the NSF's Division of Emerging Frontiers in Research and Innovation (EFRI) "will build on the success of Lehigh's Faculty Innovation Grant (FIG) and Collaborative Research Opportunity Grant (CORE) programs, which enabled chemical and bioengineering professors Steve McIntosh and Bryan Berger to produce low-cost quantum dots, or QDs, from bacteria," according to a statement issued by the university.

"QDs are small semiconductor particles that were discovered three decades ago. Researchers see their potential in transistors, solar cells, LEDs, lasers, medical imaging and even quantum computing. QDs are also very expensive to make, as they require the use of toxic solvents and costly chemicals at elevated temperatures. Berger's novel idea to produce QDs from bacteria makes this technology green and affordable," the statement explained.

Through a Lehigh CORE award, McIntosh and Berger worked with Chris Kiely, professor of materials science and engineering and director of Lehigh's electron microscopy labs, to develop a method of producing QDs at very low cost in bacteria.

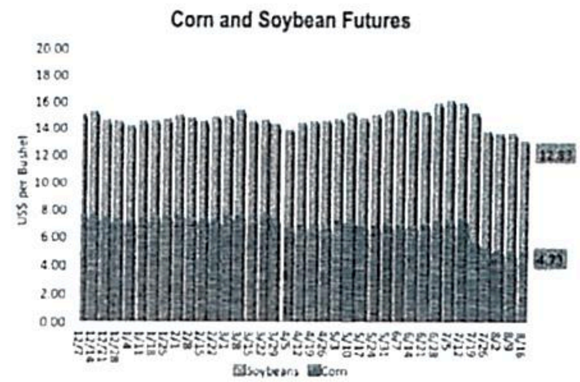
"In their successful EFRI grant, one of only a few awarded nationally last year, they added the expertise of Robert Skibbens, professor of biological sciences, and Ivan Korendovych, assistant professor of chemistry at Syracuse University. Together, the researchers hope that QDs produced through their revolutionary new method can serve as the light-harvesting component of a photocatalyst to efficiently produce methanol fuel.

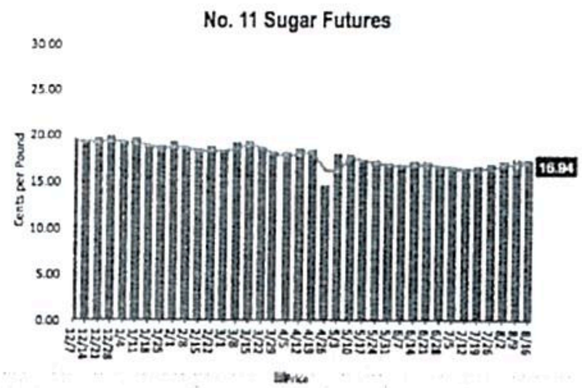
"In their EFRI project, the researchers will couple the QDs with a series of yeast-synthesized enzymes. The QDs will capture the energy in sunlight to generate an energetic electron and electron hole pair. These excited species catalyze the removal of hydrogen from water and carbon from CO_2, and produce methanol, a renewable liquid fuel, in a continuous flow process," according to the statement.

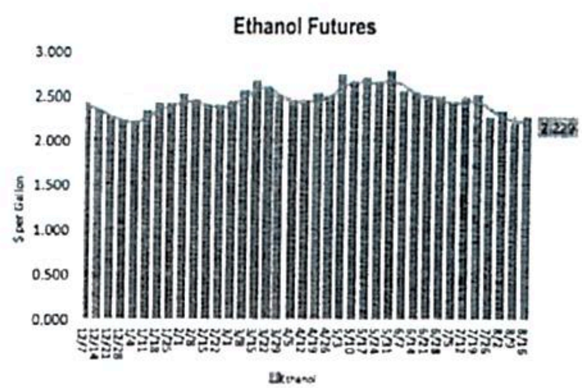
The group's unique biosynthetic process to produce QDs, the statement noted, "enables control of the dots' particle size and, with that, the wavelength and energy of light captured. It is not only a dramatically less expensive method than using precious metal catalysts, but it also makes large-scale production of liquid fuels far more feasible."

Berger commented, "The biosynthetic QDs not only enable us to design processes to produce liquid fuel at dramatically reduced cost, but also enable the development of an environmentally-friendly, bio-inspired process unlike current approaches that rely on high temperatures, pressures, toxic solvents and precious metal catalysts. Thus, we are able to develop a unique, 'green' approach to liquid fuel synthesis that substantially reduces both cost and environmental impact."

McIntosh added, "In the process of trying to achieve our goals on this project, we also will learn valuable lessons that will advance science in other ways. Making QDs more







cheaply and efficiently has many applications, such as efficient lighting, biomedical imaging and displays.

"Currently, there is no commercial route to directly and photocatalytically produce liquid fuels. Certainly, using sunlight to create liquid fuel is a high-risk, high-reward proposition, but that is what is so exciting. The implications for our nation's economy are significant," McIntosh said.

INDUSTRY & FACILITY NEWS

Valero Pulls Out of Mascoma's Planned U.S. Commercial Cellulosic-Ethanol Project

New Hampshire-based cellulosic-developer Mascoma "is working on securing the necessary project financing" to construct its two planned cellulosic-ethanol plants – one in Kinross, Mich., and another in Alberta, Canada – amid news that surfaced Valero Energy Corp. pulled out of the venture.

"Valero is no longer a participant in the Kinross cellulosic plant," confirmed Valero spokesman Bill Day to *Ethanol & Biofuels News* (*EBN*), declining to provide further details.

Mascoma announced in 2011 that Valero would provide up to US$50 million in financing for the $232 million facility in Kinross Charter Township, Mich., and purchase the 20 million gallons of ethanol it would produce annually. The remainder of funding was to come from awards by the U.S. Department of Energy (DOE) and the State of Michigan.

Construction of the Kinross facility was originally anticipated to begin in 2011 and be completed by the end of this year, but Mascoma has yet to break ground.

In an emailed statement to *EBN* on August 13, Mascoma said it "has completed the detailed design engineering and finalized the engineering, procurement and construction (EPC) bids for the planned cellulosic-ethanol facility in Kinross, which will use Mascoma's proprietary CBP [combined bioprocessing] technology platform to convert hardwood pulpwood to cellulosic-ethanol.

"Mascoma is currently focused on securing the remaining financing for the project and will not proceed until there is a firm commitment for all the required funding. Mascoma has been working closely with the [DOE] and the State of Michigan on the status of the project, and to date, Mascoma has met all of the grant obligations for the state and federal funding that the company has received.

"At this time, Mascoma cannot determine the start date for construction of the Kinross project, but the company continues to pursue new options and actively engage with interested parties," according to the company.

In addition, Mascoma told *EBN* the company continues to proceed with the development of a planned 72-million-liter-per-year (19 mgpy) multi-product biorefinery in Drayton Valley, Alberta, Canada.

"This facility will use Mascoma's proprietary CBP technology platform to convert woody biomass to cellulosic-ethanol, isopropanol, purified xylose and bio-electricity. Mascoma is working with the Sustainable Development Technology Canada, a foundation funded by the Canadian Government, on this project," according to the company.

Separately, Toronto, Ontario, Canada-based Xylitol Canada Inc., which is working with Mascoma on the planned Alberta biorefinery, on August 14 provided an updated concerning its xylitol and xylose commercialization efforts.

"The planned facility is expected to produce cellulosic-ethanol, bio-electricity and a xylose feedstock for Xylitol Canada to produce a commercial-grade xylose for the production of xylitol. The project is currently at the feasibility stage and both Xylitol Canada and Mascoma are working to secure their required project financing," according to Xylitol Canada in a statement.

Xylitol said it "has been developing its xylose production process since 2008 with a focus of producing xylose for the North America xylitol market," according to the company.

– Bryan Sims

Marathon Petroleum Acquires Interest in Three Ethanol Plants

Marathon Petroleum Corp. (MPC) acquired from Mitsui & Co. Inc. its interests in three U.S. ethanol companies for US$75 million in cash, according to an August 13 statement issued by financial advisory firm Ascendant Partners Inc.

"Under the agreement, MPC acquired an additional 24% interest in The Andersons Clymers Ethanol LLC, a 34% interest in The Andersons Ethanol Investment LLC and a 40% interest in The Andersons Albion Ethanol LLC," according to the statement.

Ascendant Partners served as Mitsui & Co.'s (U.S.) exclusive financial advisor for these transactions, the statement noted.

USDA Lowers Projected 2013-2014 U.S. Corn Crop Yield at 13.8 Billion Bushels

Projected U.S. corn production for the 2013/2014 harvest is lowered 187 million bushels to 13.8 billion bushels with the first survey-based corn yield forecast, at 154.4 bushels per acre, down 2.1 bushels from last month's projection, according to the U.S. Department of Agriculture's (USDA) *World Agriculture Supply and Demand Estimates (WASDE)* report released August 12.

Corn beginning stocks for 2013/14 "are projected 10 million bushels lower with a 15-million-bushel increase in 2012/13 exports only partly offset by a 5-million-bushel increase in imports," according to the USDA.

"Feed and residual use for 2013/14 is lowered 50 million bushels this month with the smaller crop. Exports are projected 25 million bushels lower with reduced domestic supplies and increased foreign competition. Ending stocks for 2013/14 are projected 122 million bushels lower. The projected season-average farm price for corn is raised US10¢ at both ends of the range to $4.50 to $5.30 per bushel.

"Prices received by farmers are expected to remain above cash bid levels through the fall as producers who forward-priced corn earlier in the year support the weighted average farm-gate price," according to the USDA.

Meanwhile, U.S. oilseed production for 2013/14 is projected at 96.2 million tons, down 4.7 million from July mainly due to a lower soybean production forecast, the USDA noted. Soybean production for 2013/14 is forecast at 3.255 billion bushels, down 165 million due to lower harvested area and yields.

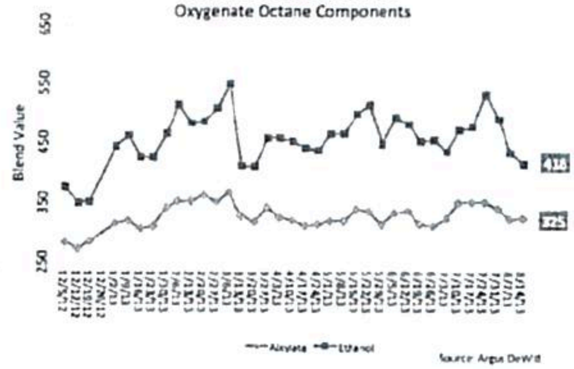
"Harvested area is forecast at 76.4 million acres, down 0.5 million from the July projection. The first survey-based soybean yield forecast of 42.6 bushels per acre is 1.9 bushels below last month's projection but 3 bushels above last year's drought-reduced yield.

"Soybean supplies for 2013/14 are projected 5% below last month based on the lower production forecast. With reduced supplies and higher prices, U.S. soybean exports are reduced 65 million bushels to 1.385 billion. Lower U.S. exports will be mostly offset by increases for South America, especially Argentina. Soybean crush is also lowered as higher prices reduce prospective exports for soybean meal. Soybean ending stocks are projected at 220 million bushels, down 75 million from last month," according to the USDA.

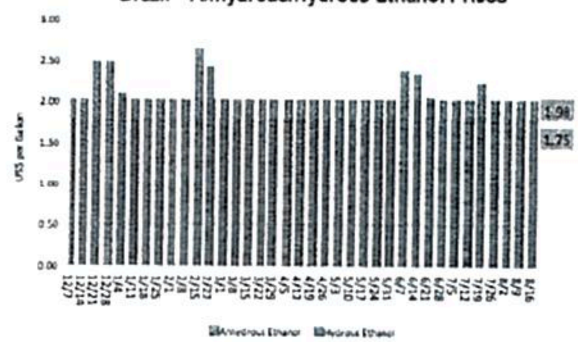
CARB to Propose 'Low Carbon Fuel Standard' Amendments in 2014

Following a California state Court of Appeals ruling last month that mostly upheld the California Air Resources Board (CARB) "low carbon fuel standard" (LCFS) rule, CARB will propose amendments to the LCFS in 2014.

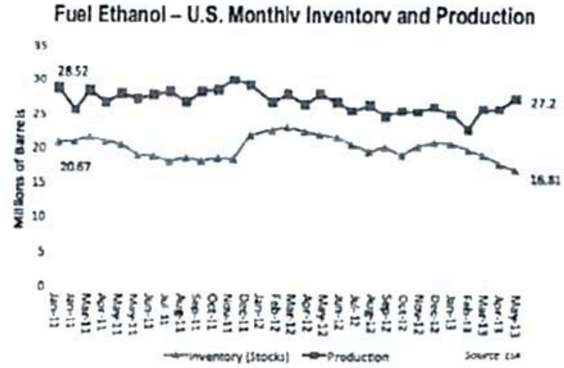
Calculated Blend Values
Oxygenate Octane Components



Brazil – Anhydrous/Hydrous Ethanol Prices



Fuel Ethanol – U.S. Monthly Inventory and Production



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The agency initially had planned to propose amendments to the rule in October 2013, but instead will delay those amendments in order to address certain procedural requirements mandated in the court ruling.

"We will be proposing for our Board's consideration in 2014 a consolidated regulation package that responds to the Court's decision and contains additional amendments that staff considers important for the continued success of the LCFS program," according to CARB.

"Meanwhile, the 2013 LCFS standards, which represent a 1.0% decrease in carbon intensity from the 2010 baseline values for gasoline and diesel, will remain in effect through 2014," according to the agency.

Cool Planet Adds Former ConocoPhillips Executive to Board of Directors

Camarillo, Calif.-based biorefining technology developer Cool Planet Energy Systems announced August 7 it appointed Archie W. Dunham to its board of directors.

Dunham joined Conoco in 1966, ultimately serving as president and CEO from 1996 to 1998 and then as chairman, president and CEO from 1999 to 2002. In 2001, he negotiated the largest merger of equals when he combined Conoco Inc. and Phillips Petroleum to form ConocoPhillips, which he chaired until his retirement in 2004.

He is currently the non-executive chairman of the board of directors of Chesapeake Energy, the largest producer of natural gas in the U.S.

"Archie Dunham brings a wealth of relevant experience that will help guide us in commercializing first-of-kind, disruptive energy technologies," said Cool Planet CEO Howard Janzen in a statement.

"We believe he can help us in building a vibrant, values-based culture as we ramp up to deploy hundreds of plants in the U.S. to meet RFS-2 [Renewable Fuels Standard] and deploy our technology globally," Janzen said.

A former U.S. Marine, Dunham was the past chairman of the U.S. Energy Association, the National Petroleum Council, the National Association of Manufacturers and a Director at the American Petroleum Institute.

In addition to Chesapeake Energy, he serves on the boards of Union Pacific Corp, Louisiana-Pacific Corp. and Deutsche Bank's Americas Advisory Board.

"Cool Planet is commercializing a new exciting technology that has the potential to fundamentally change the petroleum refining industry," Dunham said.

PRICES & MARKETS

Weekly U.S. Fuel Ethanol Inventories and Production (barrels/day)

	8/9/13	8/2/13	Change
Inventories (stocks)	16,400,000	16,700,000	300,000
Production	857,000	853,000	4,000

Source: U.S. Energy Information Administration

Renewable Identification Numbers (RINs) – $/gal

		8/16/13	8/9/13	Change
D6-Ethanol	2012	0.770	0.690	0.080
D6-Ethanol	2013	0.790	0.720	0.070
D4-Biodiesel	2012	0.870	0.810	0.060
D4-Biodiesel	2013	0.930	0.850	0.080
D5-Advanced	2012	0.830	0.760	0.070
D5-Advanced	2013	0.880	0.790	0.090

Source: Bloomberg Finance LP

NYMEX Crude Oil/Refined Product Futures

		8/16/13	8/9/13	Change
Prompt-month WTI	$/bbl	107.46	105.97	1.49
RBOB Gasoline	$/gal	2.968	2.908	0.06
Heating Oil	$/gal	2.923	2.850	0.07

Source: Bloomberg Finance LP

Spot Ethanol ($/gal)

		8/16/13	8/9/13	Change
California	Los Angeles	2.470	2.420	0.05
California	San Francisco	2.460	2.460	0.00
Illinois	Chicago	2.345	2.260	0.09
New York	New York Harbor	2.535	2.535	0.00
US	Iowa	2.460	2.460	0.00
US	Nebraska	2.460	2.460	0.00
US	S Dakota	2.460	2.460	0.00
US	Gulf Coast	2.445	2.360	0.09
US	West Coast	2.470	2.470	0.00

Source: Bloomberg Finance LP

Spot Gasoline ($/gal)

	8/16/13	8/9/13	Change
NY Conventional	2.934	2.878	0.056
NY RBOB	2.863	2.786	0.077
Houston Conventional	2.773	2.748	0.024
Houston RBOB	3.003	2.943	0.059
LA Conventional	2.925	2.826	0.099
LA RBOB	2.818	2.793	0.024

Source: Bloomberg Finance LP

"I am looking forward to being part of a company that will globally produce unsubsidized, carbon negative fuel and soil enhancing products from sustainable biomass," he added.

With the addition of Dunham, there are now four independent directors out of a total of seven on the Cool Planet board. Dunham joins former Arkansas Lieutenant Governor William Halter, Tony Radaich, a former Audit and Business Advisory Partner with Ernst & Young LLP and Arthur Andersen LLP, and former BP and Mobil technology lead Ron Sills as the other independent directors.

USDA Solicits Bids Under Feedstock Flexibility Program

The Farm Service Agency of the U.S. Department of Agriculture (USDA) announced August 15 that purchase invitations have been extended to solicit bids to the Commodity Credit Corporation (CCC) through the Feedstock Flexibility Program (FFP).

Congress created FFP in the 2008 Farm Bill, which requires the purchase of sugar as a feedstock for producing fuel-grade ethanol and other biofuels to avoid forfeiture of sugar pledged as collateral by processors when securing non-recourse commodity loans from the CCC.

"USDA is announcing the use of the FFP following the success of two sugar 'exchanges' earlier this summer. On July 9, USDA awarded contracts to purchase 91,238 metric tons of sugar in exchange for 299,153 metric tons of re-export credits and Colombian Trade Promotion Agreement Certificates of Quota Eligibility," according to the USDA in a statement.

"On July 31, USDA announced the results of a second exchange and purchased 15,504 metric tons of sugar and removed 46,559 metric tons of import access from the market," the department noted.

Federal law allows sugar processors to obtain loans from the CCC with maturities of up to nine months at the beginning of the crop year. Upon loan maturity, the sugar processor may repay the loan in full or forfeit the sugar used as collateral to the government to satisfy the loan.

The last time sugar forfeitures occurred was in 2004, but atypical market conditions have caused USDA to take a number of actions this crop year to avoid forfeitures and ensure the sugar program operates at the least cost to the federal government.

Grain Prices ($/bu)

	8/16/13	8/9/13	Change
CASH CORN			
Kansas City	5.515	5.570	-0.056
Chicago	6.138	6.020	0.118
Kansas City sorghum (milo)	4.642	4.530	0.112
Spot-month CBOT corn	4.738	4.720	0.018

Source: U.S. Department of Agriculture

Rack Ethanol ($/gal)

	8/16/13	8/9/13	Change
Aberdeen, S.D.	2.7765	2.7715	0.0050
Athens, Ga.	2.6100	2.5400	0.0700
Bettendorf, Iowa	2.5278	2.5219	0.0059
Dallas, Texas	2.5000	2.6000	-0.1000
Denver, Colo.	2.8400	2.8400	0.0000
Fargo N.D.	2.4427	2.4772	-0.0345
Indianapolis, Ind.	2.4500	2.4500	0.0000
Iowa City, Iowa	2.4427	2.4417	0.0010
Kansas City, Kan.	2.4978	2.5308	-0.0330
Lincoln, Neb.	2.4320	2.3980	0.0340
Minneapolis, Minn.	2.4330	2.4173	0.0157
Norfolk, Neb.	2.4280	2.4080	0.0200
Portland, Ore.	2.6250	2.4650	0.1600
U.S. Rack Average	**2.5389**	**2.5278**	**0.0111**

Source: Bloomberg Finance LP

Ethanol Equities

Ticker	8/16/13	8/9/13	Change	%
ADM	37.25	38.38	-1.13	-2.94
ANDE	66.24	64.36	1.88	2.92
BFRE	0.01	0.02	-0.01	-50.00
BG	76.26	77.13	-0.87	-1.13
BIOF	3.35	3.93	-0.58	-14.76
CZZ	13.89	15.57	-1.68	-10.79
GPRE	16.16	17.08	-0.92	-5.39
PEIX	3.68	3.82	-0.14	-3.66
VRNM	2.33	2.55	-0.22	-8.63
GEVO	1.70	1.85	-0.15	-8.11
CERE	1.46	1.37	0.09	6.57
AMRS	2.56	2.71	-0.15	-5.54
KIOR	2.64	4.17	-1.53	-36.69
CDXS	1.87	2.25	-0.38	-16.89
REGI	15.11	15.57	-0.46	-2.95
SZYM	11.94	12.53	-0.59	-4.71

Source: the companies

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INVISTA, SilicoLife Forge Bio-Based Chemical Collaboration Agreement

Portugal-based polymer and fiber manufacturer INVISTA Technologies S.à rl announced August 12 that it formed a collaborative agreement with Wichita, Kan.-based computational biology company SilicoLife for the development of bio-based chemicals.

The two companies are collaborating in order to further co-develop their technology platforms. One of the initial focus areas will be the production of bio-based butadiene, according to a statement issued by INVISTA.

The agreement "will leverage INVISTA's capabilities in biotechnology and catalysis, and knowledge of the chemicals industry, and SilicoLife's *in silico* metabolic engineering and rational synthetic biology capabilities for the development of new bio-based routes to industrial chemicals," the statement noted.

Commenting on the announcement, Warren Primeaux, president of INVISTA Intermediates said: "INVISTA is constantly seeking innovative approaches to advance its position in biotechnology. We anticipate this collaboration with SilicoLife will help us accelerate our timeline to develop new bio-derived processes for a range of industrial chemicals – helping us further improve our cost and sustainability position in this area."

Simão Soares, CEO of SilicoLife, added: "The collaboration with INVISTA combines our state-of-the-art engineering expertise with INVISTA's world-class research team to accelerate the design of optimized microbial strains for the cost-effective production of industrial chemicals from renewable feedstocks."

USDA Doles Out REAP Funding for Renewable-Energy Projects

The U.S. Department of Agriculture (USDA) on August 15 awarded US$21 million in funding to 631 projects across the U.S. – including 45 in North Carolina – aimed to help agricultural producers and rural small businesses reduce their energy consumption and costs, use renewable-energy technologies in their operations and/or conduct feasibility studies for renewable-energy projects.

Grant and loan funding was made available through the USDA's Rural Energy for America Program (REAP) program, which is authorized by the 2008 Farm Bill.

"Despite budget uncertainties, USDA remains focused on strengthening the rural economy," according to the department in a statement.

Biodiesel B-100 ($/gal)*

	8/16/13	8/9/13	Change
Dallas, Texas	4.59	4.70	-0.11
Des Moines, Iowa	4.83	5.05	-0.22
Denver, Colo	4.42	5.04	-0.62
Pittsburgh Pa	4.84	4.91	-0.07

*Bi-monthly Thursday settles / Source: Bloomberg Finance LP

Butanes/Natural Gas

	8/16/13	8/9/13	Change
Butane ($/gal)	1.36	1.34	0.02
Isobutane ($/gal)	1.39	1.34	0.05
Natural Gas ($/MMBtu)	3.368	3.230	0.138

Source: Bloomberg Finance LP

Co-Products ($/Ton)*

	8/16/13	8/9/13	Change
Dist. Dried Grains	212.50	211.50	1.00
Corn Gluten Feed	112.50	131.50	-19.00
Corn Gluten Meal	560.00	572.50	-12.50
Crude Corn Oil (wet-mill)($/lb)	39.50	39.50	0.00

*Weekly Tuesday settles / Source: Bloomberg Finance LP

Ethanol-related projects awarded under this round of funding include:

- RYARAI LLC (Nebraska): $49,999 grant to support the installation of two flexible fuel pumps
- Tom's Service LLC (Nebraska): $33,225 grant to support the installation of a flexible fuel pump
- Governor's Gas LLC (South Dakota): $18,276 grant to support the purchase and installation of two flexible blender pumps
- Hutchinson Co-Op (Minnesota): $7,489 grant to support the installation of a blender pump to dispense various grades of ethanol and to help farmers, ranchers and small businesses develop renewable energy systems and make energy efficiency improvements.

EdeniQ, Pacific Ag Partner to Integrate Cellulosic-Ethanol into Installed Corn-Ethanol Production Base

Visalia, Calif.-based EdeniQ Inc. and biomass logistics firm Pacific Ag jointly announced August 15 they entered

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into a five-year exclusive collaboration agreement to assist existing corn-ethanol production facilities to add cellulosic-ethanol production capability.

"This collaboration holds the potential to enhance the commercial viability of cellulosic-ethanol production in the U.S.," said EdeniQ President and CEO Brian Thome in a statement.

"By combining Edeniq's bolt-on production technologies for corn-ethanol plants with Pacific Ag's agricultural biomass supply capabilities, we will provide the best turnkey solution for today's producers to economically integrate cellulosic production into their existing facilities," Thome said.

The companies estimate there are about 200 ethanol plants currently operating in the U.S. in 28 states, producing a collective 14 billion gallons annually and representing about 10% of all gasoline sold in the U.S.

"They rely almost exclusively on corn as a feedstock, a grain that has been subject to wide fluctuations in price and supply over the past decade, driven by competing end uses, market speculation and weather. In 2005, the U.S. Department of Energy issued its 'billion-ton' study.

"That study determined that U.S. agriculture and forest resources have the capability to produce at least one billion dry tons of biomass annually in a sustainable manner, enough to produce biofuels to meet more than one-third of the current demand for transportation fuels," according to the companies.

Bill Levy, founder and CEO of Pacific Ag, added, "This collaboration agreement brings together two companies at the forefront of solving a big risk factor to commercial production of cellulosic-ethanol: getting biomass from the field to the plant with maximum reliability and efficiency and successfully converting that biomass at a low per-gallon capital investment for existing production facilities. For Pacific Ag, this potential market represents a key additional sector in our strategy to maximize the role of [agricultural] biomass in the nation's energy supply."

Midwest AgEnergy Group Breaks Ground on Corn-Ethanol Biorefinery in N.D.

Midwest AgEnergy Group announced August 9 it broke ground for construction on a 65 million-gallon-per-year (mgpy) corn-ethanol production plant co-located next Great River Energy's Spiritwood Station, a combined heat and power plant, located near Jamestown, N.D.

The US$155 million project is spearheaded by Midwest AgEnergy Group, owned by Great River Energy. The group also owns Blue Flint Ethanol, a 65 mgpy corn-ethanol plant near Underwood, N.D., also co-located with a power plant.

The future facility will purchase about 23 million bushels of corn annually sourced in the Dakotas and co-produce 198,000 tons of dried distiller's grains with solubles that will be marketed to feedlots for the livestock industry.

Additionally, the plant will co-produce about 6,900 tons of fuel-grade corn oil, which will be marketed for use in making products, such as biodiesel.

Near-term activities include engineering and site preparation, with full construction operations underway this fall, according to Midwest AgEnergy in a statement. Commercial operation is scheduled for the first quarter of 2015.

The team of Karges-Faulconbridge, Inc. and McGough Construction, respectively, are the design/build contractors for the plant.

IRFA: Iowa Biodiesel Production Sets Record in Second-Quarter 2013

The Iowa Renewable Fuels Association (IRFA) announced August 8 that the combination of a strong federal Renewable Fuel Standard (RFS) and reinstatement of the federal biodiesel blender's tax credit has led to Iowa biodiesel plants producing a record 56.7 million gallons during the second-quarter this year.

The 99.5 million gallons of Iowa biodiesel production during the first six months is also a record for the first half of any year, according to the IRFA. According to the Iowa Department of Revenue, nine of the state's 12 biodiesel plants reported production.

"Record biodiesel production this quarter is providing a noticeable boost to Iowa soybean farmers and livestock producers," IRFA Communications Director T.J. Page said in a statement.

"With a strong RFS and the biodiesel tax incentive helping to level the playing field against long-standing petroleum subsidies, biodiesel is successfully competing in the marketplace. More locations are offering higher blends of biodiesel than ever before. We expect robust biodiesel production throughout 2013," Page said.

According to the IRFA, the industry "is working hard to expand biodiesel distribution and to promote higher biodiesel blends in order to sustain the growth pattern."

Iowa currently has 12 biodiesel facilities with the capacity to produce nearly 315 million gallons annually.

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Intrexon Closes US$184 Million IPO

Germantown, Md.-based synthetic biology firm Intrexon Corp. announced August 7 the closing of its initial public offering (IPO), raising US$184 million in gross proceeds.

The company sold about 11.5 million shares of its common stock at $16 per share. About 10 million shares were sold as part of the initial offering, and another 1.5 million shares were sold to the underwriters of the offering as part of their overallotment option, according to a statement issued by Intrexon.

J.P. Morgan and Barclays acted as joint book-running managers for the offering. Griffin Securities and Mizuho Securities acted as co-managers for the transaction.

According to Intrexon, the company "is focused on collaborating with companies in health, food, energy and the environment," according to its website. One of its focuses in the energy sector includes the conversion of a synthetic version of n-butanol for fuel and chemical applications.

INTERNATIONAL DEVELOPMENTS

Ethanol Sales by Brazilian Mills in South-Central Region Up Over 31%

The Brazilian Sugarcane Industry Association (UNICA) reported August 9 that ethanol sales by mills in Brazil's South-Central region totaled 1.44 billion liters (380 million gallons) in the second half of July, an increase of 31.23% over the volume recorded in the first half of the month (1.09 liters or 287.95 million gallons) and a 33.21% increase compared to the same period in 2012 (1.08 billion liters or 285 million gallons).

Of total sales in the second half of July, 307.07 million liters (81.1 million gallons) were destined for export and 1.13 billion liters (299 million gallons) were sold in the domestic market – a high of 35.86% compared to the amount recorded in the same half of the previous year.

In the domestic market, sales of anhydrous ethanol reached 465.99 million liters (123.1 million gallons) in the last half of July, while hydrous ethanol reached 663.34 million liters (175 million gallons) – an impressive increase of 20.71% compared to 549.53 million liters (145 million gallons) sold in the first half of July and high 30.99% of the value calculated in the same period of the 2012/2013 harvest (506.40 million liters or 133.78 million gallons), according to UNICA.

Thus, sales of hydrous ethanol for the domestic market totaled 1.21 billion liters (320 million gallons) in the month of July, registering an increase of 18.56% over the total volume sold in June this year (1.02 billion liters or 269 million gallons) and an increase of 31.34% over sales of July 2012, UNICA noted.

UNICA Technical Director Antonio de Padua Rodrigues commented: "As ethanol prices were economically advantageous to consumers in major markets, it was natural to expect a breakthrough in hydrous ethanol. The expectation is that this trend is maintained in the coming weeks, as we have seen a change setting pump prices," he added.

Sugar and Ethanol

The increase in ethanol sales "was reflected in the decision of production enterprises, which continued prioritizing biofuel," according to UNICA.

"Thus, the proportion of cane directed to ethanol production reached 55.03% in the last fifteen days of July, higher than that recorded in the first fifteen days of the month (54.65%) and significantly higher than the 49.41% checked in the same half of last season," UNICA noted.

Ethanol production reached 1.90 billion liters (502 million gallons) in the last 15 days of July this year, an increase of 6.84% over the figure recorded in the first half of the month and 6.63% compared to the volume determined in the same 2012 date.

The total volume of ethanol produced in the second half of July – 1.01 billion (267 million gallons) – refers to hydrous ethanol and 888.78 million liters (235 million gallons) was anhydrous ethanol (a growth of 14.29% over the volume produced in the same period of the 2012/2013), according to UNICA.

Sugar production, in turn, showed a significant decrease of 14.80% in the last half of July, totaling 2.53 million metric tons compared to 2.97 million metric tons registered in the same period last year.

Accumulated sugar production since the beginning of the 2013/2014 season through August 1 reached 13.84 million tons, while ethanol production reached 11.33 billion liters (2.99 billion gallons), of which 6.66 billion liters (1.76 billion gallons) was hydrous ethanol and 4.67 billion liters (1.23 billion gallons) was anhydrous ethanol.

Sugar Cane Crushing, Quality of Raw Materials

The volume of sugar cane produced by mills in Brazil's South-Central region reached 44.26 million tons in the second half of July, a decrease of 4.35% over the amount recorded in the same half of the month last year (46.28 million tons).

Accumulated sugar cane production since the beginning of the current crop through August 1 reached 268.76 million tons, according to UNICA.

"This amount exceeds by 51.91 million metric tons grinding verified in the same period of 2012, but still remains 9.77% lower than the 2010/2011 season, when the

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plants located in the South-Central region processed 556.94 million tons at the end of that season," UNICA noted.

The amount of total recoverable sugars (ATR) per ton of cane processed sugar reached 133.48 kilograms (kg) (about 294 pounds) in the second half of July, a figure almost identical to that observed on the same date of the previous crop (133.19 kg per ton of cane of sugar), according to UNICA.

Accumulated ATR per ton of raw material since the beginning of the season 2013/2014 through August 1 reached 126.01 kg, UNICA further noted.

Regarding the impact of frosts observed in late July, Rodrigues explained that the weather phenomenon hit most of the area with cane sugar south of São Paulo and in the states of Paraná and Mato Grosso do Sul where frost reached compromised growth and sprouting of the plant, with death of the apical bud, which is part of the lateral buds and leaf blight.

"That assessment still preliminary, we can say that the climatic phenomenon may reduce agricultural productivity and ATR concentration cane harvested in the units located in the affected regions," Rodrigues said.

UNICA, in conjunction with the Center for Sugarcane Technology-CTC, other associations and unions of the Mid-South, are quantifying the impacts of frost, as well as evaluating other variables associated with the production and marketing of ethanol and sugar, to complete the review of the estimate for the 2013/2014 harvest season.

UNICA noted that this new estimate should be disclosed in early September.

São Martinho's EBITDA Grows 95.8% to US$91.1 Million in 2013-2014 Fiscal Year Earnings

São Martinho, one of Brazil's largest sugar and ethanol producers, announced August 12 in its first-quarter 2013/2014 fiscal year (1Q14) earnings its adjusted earnings before interest, taxes, depreciation and amortization (EBITDA) during the period was R$211.6 million (US$91.1 million), an increase of 95.8% from 1Q13.

The main drivers for the improvement in EBITDA margin were attributed to higher sales volume by all of the company's products due to growth in crushing volume, and lower unit production costs of sugar and ethanol due to higher utilization of installed capacity, which increased dilution of fixed costs, according to the company in its earnings statement.

The volume of sugar cane processed in the first quarter of the 2013/14 crop year for São Martinho totaled 5.5 million tons, which represents growth of 90% on the same period of the previous crop year.

"The improvement in crushing volume was driven by (i) the recovery in yields and expansion in sugar cane fields; and (ii) the more favorable weather conditions compared to the same period last year," according to São Martinho in the statement.

During the reported quarter, the São Martinho Group "prioritized the production of sugar and anhydrous ethanol, which are products with higher contribution margins and more resilient demand compared to hydrous ethanol," the company noted.

However, the firm noted a downward trend in prices observed in the previous quarter continued in 1Q14 (i.e., April-June 2013).

"The decline reflects the higher supply of sugar in the global market due to the start of the harvest in Brazil in April, which enjoyed weather that was favorable for crushing and consequently for sugar production.

"Despite the drop in sugar prices, the depreciation in the Brazilian real served to mitigate the decline in prices in local currency. Despite the current price pressures, market consensus points to a surplus for the 2014/15 crop of approximately 3.5 million tons, or approximately 2% of world consumption.

On June 30, the São Martinho Group had sugar prices locked-in for 91% of its net exposure (total sugar production in the 2013/2014 crop year, excluding our natural hedge with Consecana). As a result, the impact from lower sugar prices should barely have any impact on the group's results for the current fiscal year," according to the company.

The firm further noted, "In the first quarter of the 2013/14 crop year, prices for both anhydrous and hydrous ethanol were higher than a year earlier (+2.6% and +2.8%, respectively), but lower than in the last quarter of the previous crop year. We believe this reduction in prices in recent months reflects the higher supply of ethanol in the market, due to higher crushing volume and greater share of ethanol in the production mix.

"As mentioned last quarter, the increase from 20% to 25% in the addition of anhydrous ethanol to the Type-A gasoline blend (adding some 2 billion liters per year) and the cuts in the PIS/Cofins tax rates on ethanol production and sale should serve as key drivers of ethanol demand. In the last two months, we have already observed some firming of demand and, despite the high supply of ethanol this season, prices are stable compared to the same period last year," according to São Martinho.

GranBio, Rhodia Ink Bio-Based Chemical Partnership Deal

Belgian specialty chemical giant Solvay announced August 12 that Rhodia, a member of the Solvay Group, signed an agreement to partner with Brazilian biotechnology company GranBio to produce bio-based n-butanol derived from sugar can straw and bagasse, an abundant raw biomass material used in Brazil to produce a variety of bio-based products, including cellulosic-ethanol.

Under the partnership, the companies "plan to build the world's first biomass-based n-butanol plant in Brazil, which will enter into operation in 2015," according to a statement issued by Solvay.

Both companies "will benefit from agreements that each of them has already made with companies that own the technology," the statement noted.

According to executive from both firms, the project is a key step for GranBio and Rhodia in the manufacturing of chemicals made from renewable sources.

"The partnership with Rhodia is fully aligned with our business partnership model and our strategy to develop solutions that can replace fossil fuels and chemicals with renewable products," said GranBio CEO Bernardo Gradin in the statement.

Vincent Kamel, CEO of Coatis, a Solvay Group business unit based in Brazil, added: "This innovative project reflects our focus on technologies based on renewable resources, and the partnership with Brazil's GranBio demonstrates our confidence in the country's great potential in this field."

An essential chemical in the production of acrylates and methacrylates, n-butanol is widely used in the paint and solvent industries, in which Solvay is South America's market leader.

The investment in the bio-based n-butanol manufacturing plant will "require the approval of the companies' boards," according to the companies, and the structure of the agreement "is to be submitted for clearance by Brazil's antitrust body, CADE," the statement further noted.

Aurora Algae Completes Construction on Algae Production Test Site in Australia

Hayward, Calif.-based algal technology developer Aurora Algae announced August 13 that, in collaboration with Durack Institute of Technology, the company has completed construction of a new algae cultivation test site in Geraldton, Western Australia, to "evaluate the potential of the Mid-West region for the production of microalgae," according to a statement issued by Aurora Algae.

The company stated that it "has operated a pilot-scale algae cultivation facility in Karratha, Western Australia, since May 2011, successfully demonstrating production of up to 15 [metric tons] of dried algal biomass per month," according to the statement.

"We have fully leveraged the Karratha site, demonstrating the efficient functioning of a small-scale operation, while continuing to refine our cultivation and harvesting processes," said Greg Bafalis, CEO of Aurora Algae in the announcement.

"With the Karratha site, we believe we have demonstrated the most technologically advanced algae production system in the world. Having achieved this milestone, we are now preparing for the commercial production stage of our operation, beginning with a careful evaluation of various additional potential cultivation sites," Bafalis said.

Geraldton is one potential commercial-site location being evaluated by Aurora Algae, the company noted.

"Beyond favorable weather conditions and proximity to the coast, Geraldton also offers a stable, local work force and the additional benefit of being home to the Batavia Coast Marine Institute (BCMI), whose facilities provide a great environment for ongoing research and development activities," Bafalis explained.

Part of Durack Institute of Technology, the BCMI "is a state of the art training, research and development facility," according to Aurora Algae, located at Separation Point in Geraldton.

"We are very excited to be collaborating with Aurora Algae on this project," said Bert Beevers, managing director of Durack Institute of Technology.

"We believe our existing facilities, expertise and infrastructure will be useful resources during this evaluation stage. Additionally, we appreciate Aurora's planned investments in infrastructure and processes, which will provide ongoing value to our institution as well as the Mid-West region, as the algae cultivation industry continues to grow," Beevers said.

BDI-BioEnergy Contracted to Retrofit Spanish Biodiesel Plant

Austria-based BDI-BioEnergy International AG announced August 8 it signed a contract agreement with existing customer Stocks del valles in Spain to upgrade the 31,000-ton (9.3 million-gallon-per-year) biodiesel production facility to convert multiple, lower-grade feedstocks.

As part of BDI-BioEnergy's "RetroFit Program," the company will install a new type of pre-esterification

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unit, allowing use of waste animal fats, trap grease and other waste oils high in free fatty acids, according to a company statement.

"We are very pleased to support our customer with a long-term business relationship, to optimize his existing biodiesel plant to the state-of-the-art multifeedstock technique," said Edgar Ahn, BDI-BioEnergy International chief science officer and member of the board in a statement.

"This is another proof that our retrofit technology is increasingly in demand for international biodiesel plants. In addition, it provides an efficient way for biodiesel producers to increase the profitability of their existing plants with the experience and the technology of BDI," Ahn noted.

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